

## REMARKS

The Examiner rejected claims 1 – 6, 8 – 15 , 17, and 18 under 35 U.S.C. 103(a) as being unpatentable over Wakai *et al.* In that regard, the Examiner stated:

“Wakai discloses . . . ‘a housing (item 500 of Fig. 5), the housing containing at least a portion of the network adapter, the microprocessor (item PROCESSOR), the graphics adapter, the light valve, and the light source’ (because ‘*at least a portion of*’ is interpreted as not to be limiting to all the elements recited.)

‘wherein the video projector is capable of projecting a graphic image onto a screen . . . that is remote from the video projector, is capable of applying Keystone correction to a video frame, and is operable to receive the [video data] video frame in digital form from [the network adapter] a network (526 of Fig. 5) . . . .’”

### **The Housing Limitation**

Claim 1 requires

“a housing, the housing containing at least a portion of the network adapter, the microprocessor, the graphics adapter, the light valve, **and** the light source”  
(emphasis added)

The above limitation requires at least a portion of the network adapter, the microprocessor, the graphics adapter, the light valve and the light source be included within a single housing. As the Examiner is aware, the word “and” is a Boolean function that is evaluated by the following table:

A | B | A AND B

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F | F | F

F | T | F

T | F | F

T | T | T

Thus, in order for a portion of a number of items to be included in the housing, a portion of each of those items must be included in the housing.

The Examiner states:

“‘at least a portion of’ is interpreted as not to be limiting to all the elements recited.).”

The Examiner provides no basis for his interpretation. It appears that the Examiner is interpreting the above housing limitation as if the housing limitation utilized the word “or” to group the claimed items that are included within the housing. However, as discussed above, the housing limitation groups the claimed items that are included in the housing with the word “and.”

Wakai *et al.* does not disclose a housing that contains at least a portion of a network adaptor, a microprocessor, a graphics adapter, a light valve, and a light source. As shown in Figure 15A of Wakai *et al.*, the LCD to which the Examiner cites is contained within one housing 110, while the network adaptor and the microprocessor to which the Examiner cites is contained within another housing 114. As discussed below, the fact that each of the claimed components of the video projector is at least partially contained within a single housing increases the utility of the video projector and increases the commercial value of the video projector.

### **The Remote Screen Limitation**

Claim 1 requires:

“the video projector is capable of projecting a graphic image onto a screen that is remote from the video projector.”

With respect to that limitation, the Examiner stated:

“Wakai’s disclosure shows LCD display (items 534, 536 of Fig. 5) that would have rendered the claimed invention obvious to an artisan, because LCD display based on light valve coupled to light source is a very well known device in the art capable of providing high brightness and efficiency without excessive power consumption.”

According to MPEP Section 2142:

“To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as

to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.”

The Applicant respectfully submits that the Examiner’s statement does not provide a proper basis for modifying Wakai *et al.* to create the claimed video projector as required by MPEP Section 2142. The fact that an LCD display is well known does not provide a teaching to remove the LCD display from Wakai *et al.* and to replace the LCD display with a video projector that can project an image onto a remote screen. To the contrary, it appears to the Applicant that the fact that LCD displays are well known and have beneficial properties teaches against removing the LCD display from the system of Wakai *et al.* The Examiner has not cited any portion of Wakai *et al.* that suggests removing the LCD display and replacing the LCD display with a video projector. Similarly, Applicant respectfully submits that the Examiner has not presented a “convincing line of reasoning” as to why an artisan would have found the claimed invention to have been obvious in light of the teachings” of Wakai *et al.* Thus, Applicant respectfully submits that the Examiner has not provided a proper basis for modifying Wakai *et al.* to create the claimed invention.

### **The Keystone Limitation**

Claim 1 requires that the video projector is

“capable of applying Keystone correction to a video frame.”

With respect to that limitation, the Examiner stated:

“keystone correction is also a notoriously well known procedure in the art that would reduce trapezoidal distortion of a projected video frame, an artisan would be motivated to implement this existing procedure in Wakai’s disclosure because the implementation would reduce trapezoidal distortion of a projected video frame. Therefore, the claimed invention would have been obvious to a person of ordinary skill in the art at the time the invention was made.”

In summary, the Examiner argues that one of ordinary skill in the art would utilize Keystone correction to reduce trapezoidal distortion of a projected video frame. Thus, the basis provided by the Examiner for combining Keystone correction with Wakai *et al.* is to reduce trapezoidal distortion of a projected video frame.

The Applicant respectfully submits that the Examiner's statement does not provide a proper basis for modifying Wakai *et al.* to create the claimed video projector as required by MPEP Section 2142. The Examiner correlates the claimed light valve to items 534 and 536 of Figure 5. Item 534 is not a light valve, thus it is not relevant to this discussion. Item 536, a 10" LCD display, does contain a light valve. Item 536 is described by Wakai *et al.* as follows:

"The display 536 is used by the attendant for menu navigation, through function or task menus, on the attendant control panel 110 and for movie previews. Preferably, the display 536 is a ten inch, liquid crystal display, having a resolution of 640x480 and incorporating active matrix color display technology." Wakai *et al.*, col. 12, lns. 37 – 42.

An LCD display, such as an active matrix display of Wakai *et al.*, has no trapezoidal distortion because the display screen is located immediately adjacent to the LCD elements. Thus, there is no need to reduce trapezoidal distortion. Because there is no need to reduce a distortion that does not exist, there is no need to perform Keystone correction. Therefore, Applicant respectfully submits that the Examiner has not presented a "convincing line of reasoning" as to why an artisan would have found the claimed invention to have been obvious in light of the teachings" of Wakai *et al.*

#### **"In Digital Form" Limitation**

Claim 1 requires:

"the video frame is output from the graphics adapter in digital form."

In regard to the above limitation, the Examiner stated:

"The graphics adapter (530) does output video in digital form, because the graphics adapter is a MPEG DEC VGA and all communications across the Wakai's disclosure are transmitted as digital data (see col. 3, lines 47 – 39, vol. 4 lines 43 – 44)."

The first cited portion of Wakai *et al.* by the Examiner follows:

"FIG. 1 illustrates a system block diagram of a digital video on demand and backup broadcast distribution system of the present invention."

The phrase "digital video" refers to "the capturing, manipulation and storage of video in digital formats." (See [http://www.webopedia.com/TERM/d/digital\\_video.html](http://www.webopedia.com/TERM/d/digital_video.html).) Thus, this citation provides no support for outputting a video frame from a graphics adaptor in digital form.

The second portion of Wakai *et al.* cited by the Examiner follows:

“All communications across both of the networks are transmitted as digital data and when necessary, are converted to analog signals at the seat electronics units.”

The above citation states that communications across networks are transmitted as digital data. A network is not utilized by Wakai *et al.* to connect a graphics adaptor to an LCD display. Thus, the above citation provides no support for outputting a video frame in digital form from a graphics adaptor. The Examiner’s second citation is clarified by Wakai *et al.*

“The seat video display 1102 provides the passenger with an LCD display for viewing personal entertainment data and information service data at their seat. Preferably, the seat video display 1102 is housed within a stowable seat display arm which is rotated out when in use and stored within an arm rest when not in use. Alternatively, the seat video display 1102 is located within the seatback or bulkhead in front of the passenger's seat. The viewing angle, high brightness and high contrast are characteristics which can be adjusted by a user in the preferred embodiment of the seat video display 1102. The data received by the seat electronics unit 1100, over the IEEE 1394 bus, is received in a digital format. Accordingly, the seat electronics unit 1100 includes one or more digital-to-analog converter circuits for converting the received digital data stream, representing the video and audio, to an analog data stream before it is transmitted to either the display 1102 or the headset 1106.” Wakai *et al.*, col. 15, ln 55 – col. 16, ln. 4. (emphasis added)

**The above citation clearly states that data is transmitted to LCD displays in analog form.**

The device that transmits data to an LCD display is a graphics adaptor. Thus, one of skill in the art would understand that the graphics adaptor of Wakai *et al.* outputs video in analog form, not digital form.

### **Summary for Claim 1**

It appears to the Applicant that the Examiner does not appreciate what is being claimed by claim 1. Claim 1 claims a video projector. The claimed video projector contains a number of components. The video projector physically couples each of the claimed components to each other. Thus, the video projector physically restrains each of the claim’s components. Further, at least a portion of each of the claimed components are included within a single housing. Because each of the claimed components are physically coupled and at least a portion of each of the components are included in a housing, the video projector can be easily transported by

transporting the housing. Such a portable system has significant commercial value. For example, a salesman may transport such a system to a remote location, connect the video projector to a network, and use the video projector in a presentation to a large number of people.

In some embodiments of the claimed video projector, each of the components listed in claim 1 may be entirely within the housing. However, in other embodiments of the video projector, a portion of one or more components may not be entirely included within the housing. For example, a portion of a network adaptor, such as a J11 network adaptor connector, may not be within the housing. By placing the network connector external to the housing, a user may more easily access the connector. However, because the listed components of the video projector are all physically coupled, the video projector can be easily transported by transporting the housing.

Wakai *et al.* does not teach a video projector as claimed in claim 1. The elements of Wakai *et al.* to which the Examiner cites include components of a system management computer system 114 that are enclosed in a first housing and a remote LCD display in an attendant control panel 110 that is enclosed in a second housing. These components do not form a video projector, much less the claimed video projector. In addition, these components are not included in a single housing. Nor are they physically coupled by the video projector. The cited components are not capable of projecting a graphic image onto a screen that is remote from the video projector. The cited components are not operable to perform keystone correction. The graphics adaptor of Wakai *et al.* is also not operable to output video frames in digital form. Instead, analog VGA signals are utilized.

For the above reasons, claim 1, together with claims 2 –18, each of which include identical limitations to those discussed above, are believed to be allowable over the cited art.

### **Power Supply Limitation of Claim 10**

Claim 10 requires:

“the power supply is operable to supply power to the network adaptor, the microprocessor, the graphics adapter and the light valve.”

Thus, claim 10 requires a video projector that includes a single power supply that powers a network adaptor, a microprocessor, a graphics adapter and a light valve.

In regard to the above limitation, the Examiner stated:

“the power supply (item 504) is operable to supply power to network adaptor, the microprocessor, the graphics adapter and the light valve as claimed.”

Applicant submits that power supply 504 of Wakai *et al.* does not power a light valve. The Examiner correlates the claimed light valve to items 534 and 536 of Figure 5. Item 534 is not a light valve, thus is not relevant to this discussion. Item 536, a 10” LCD display, does contain a light valve. Item 536 is described by Wakai *et al.* as follows.

“The display 536 is used by the attendant for menu navigation, through function or task menus, on the attendant control panel 110 and for movie previews. Preferably, the display 536 is a ten inch, liquid crystal display, having a resolution of 640x480 and incorporating active matrix color display technology.” Wakai *et al.*, col. 12, lns. 37 – 42.

In order for the LCD display 536 to receive power from power supply 504, the power would have to be supplied by one of two paths. The first path would pass through backplane 502, PCI/ISA bus 510, Pentium processor 500, RS-232 interface 514, RS-232 cable, a touch screen, and then to LCD display 536. The RS-232 interface of a Pentium processor does not include a power output. Similarly, an RS-232 cable does not include a wire for providing power. Thus, power supply 504 could not provide power to LCD display 536 via this path.

The second path would pass through backplane 502, PCI bus 532, VGA interface 530, a VGA cable, LCD/headphone interface 534, and a second cable. A VGA interface contains 15 pins. None of those pins provides power. Similarly, a VGA cable contains 15 wires, none of which provide power to a display. Thus, power supply 504 could not provide power to LCD display 536 via this path.

In Applicant’s April 12, 2005 Amendment, the Applicant stated:

“Applicant cannot locate any disclosure in Wakai *et al.* that discusses power supply 504 providing power to the LCD display 536 via the VGA interface. If the Examiner would provide the factual basis for his statement regarding power supply 504 providing power to the LCD display 536, it would enable Applicant to provide a more complete response.”

The Examiner did not provide any factual basis as requested by Applicant. Again, Applicant requests the Examiner to provide a factual basis for his statement regarding power supply 504 providing power to LCD display 536.

### CONCLUSION

It is submitted that the present application is presently in form for allowance. Such action is respectfully requested.

Respectfully submitted,

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